Express5800

NEC

BMC Configuration

User's Guide

Chapter 1 Summary

Chapter 2 System Requirements

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Rev.1.10

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About this Document

This document explains the complete procedures from installation of "BMC Configuration" to setup of managed server.

Before attempting to operate BMC Configuration, read this document so as to gain an adequate understanding of the contents.

■ **Notes**

This document is intended for persons who are familiar with the operating system's functions and operations and the network's functions and setup. For operations and inquiries about the operating system, see its online help information.

This document covers universal information about generally managed servers. The notes and restrictions on use of each product as a managed server are explained in the user's guide provided with the managed server and "ESMPRO Manager Ver.5 Setup guide".

Names used with screen images in this document are fictitious. They are unrelated to existing product names, names of organizations, or individual names. The setting values on the screen images are shown as examples, so setting values such as IP addresses on screen images are not guaranteed for operation.

In this document. "¥" expresses back slash.

■ **About Symbols in This Document**

The following explains three symbols that are used in this document:

IMPORTANT:	Points or particular notes you must follow when handling software of servers.
CHECK:	Points or notes you need to check when handling software or servers.
TIPS:	Useful information.

1. Summary

BMC Configuration is software that works on the managed server. It configures BMC on the managed server.

1.1 BMC Configuration Functions

- **BMC Configuration**
  You can specify the configurations to the managed server's BMC.

- **Backup BMC settings**
  You can output the settings of BMC Configuration on the managed server to a file.

- **Restore BMC settings**
  You can apply the BMC Configuration settings which are backed up in files to BMC on the managed server.

- **System BIOS Settings**
  You can configure the System BIOS settings on the managed server.
  The settings are effective by rebooting the server.

- **Clear BMC SEL**
  You can clear the SEL(System Event Log) information of BMC.

- **Initialize BMC Configuration**
  You can clear the BMC Configuration information to the ex-factory settings.

- **Reset BMC**
  You can restart BMC without system rebooting.

- **System Information (Version Information)**
  The versions of BMC Firmware, Boot Firmware, Sensor Data Information (SDR) and System BIOS can be collected.

2. System Requirements

2.1 Managed server

Install BMC Configuration on the server. BMC Configuration works on the following environment.

- **Hardware**

  It needs to be managed by NEC ESMPRO Manager (Ver.5.4 or later) and satisfy the following conditions.

  - **Managed Server**

    NEC Express5800 Series and NEC Storage NS Series that integrates EXPRESSSCOPE Engine 3.

  - **Memory**

    512MB or more

  - **Availability of hard disk**

    100MB or more

- **Software**

  - **Operating system**

    Microsoft Windows Server 2003 R2, Standard Edition/Enterprise Edition
    Microsoft Windows Server 2003 R2, Standard/Enterprise x64 Edition
    Windows Server 2008 Standard/Enterprise
    Windows Server 2008 Standard/Enterprise/Datacenter x64 Edition
    Windows Server 2008 R2, Standard/Enterprise/Datacenter

    Red Hat Enterprise Linux Advanced Platform 5 (x86, x64)
    Red Hat Enterprise Linux Server 5 (x86,x64)
    Red Hat Enterprise Linux Server 6 (x86, x64)
    SUSE Linux Enterprise Server 10 (SP3) (x86, x64)

IMPORTANT:

- You can not install BMC Configuration in the following case.
  -- Installation on guest OS virtual of machine.
- The following packages are necessary to use BMC Configuration on Red Hat Enterprise Linux Server 6(x64). If these are not installed, you need to install them from the install disc of operating system.
  -- glibc i686
  -- nss-softokn-freebl i686
  -- libxml2 i686
  -- zlib i686

2.2 Server Management Driver

On Linux, OpenIPMI Driver must be started to use BMC Configuration.

CHECK:

- Use the following command to confirm that OpenIPMI Driver has been installed on Linux.
  rpm -qa | grep -i OpenIPMI

- If the OpenIPMI Driver is stopped, you need to start OpenIPMI Driver. You can confirm the status of OpenIPMI Driver by the following command.
  /etc/init.d/ipmi status

  If "not loaded" is displayed after executing the above command, please start OpenIPMI Driver by the following command.
  /etc/init.d/ipmi start

  And you can start OpenIPMI Driver automatically at the system booting to execute the following command and reboot the operation system.
  chkconfig ipmi on

3. Installation

3.1 BMC Configuration Installation for Windows

Explain the installation of BMC Configuration.

3.1.1 Check before installation

Check the followings:
-- See chapter 2.1 to check the system requirement of the managed server and BMC Configuration.
-- Login to Windows as Administrator.

3.1.2 Start installation menu

- **If you install BMC Configuration by using downloaded modules:**

After unzipping the downloaded modules, please execute the following file. BMC Configuration installation will be started.

¥bmc_config¥setup.exe

- **If you install BMC Configuration by using NEC EXPRESSBUILDER**

You can install BMC Configuration as follows:

(1) Insert the NEC EXPRESSBUILDER DVD-ROM into the DVD drive on the managed server which Windows has started. The menu will be displayed automatically.
(2) Click [Software Setup]-[BMC Configuration].
The BMC Configuration installation menu for Windows will appear. If the menu is not displayed, please execute the following file. BMC Configuration installation will be started.

< DVD drive >¥"NEC EXPRESSBUILDER revision"¥win¥bmc_config¥setup.exe

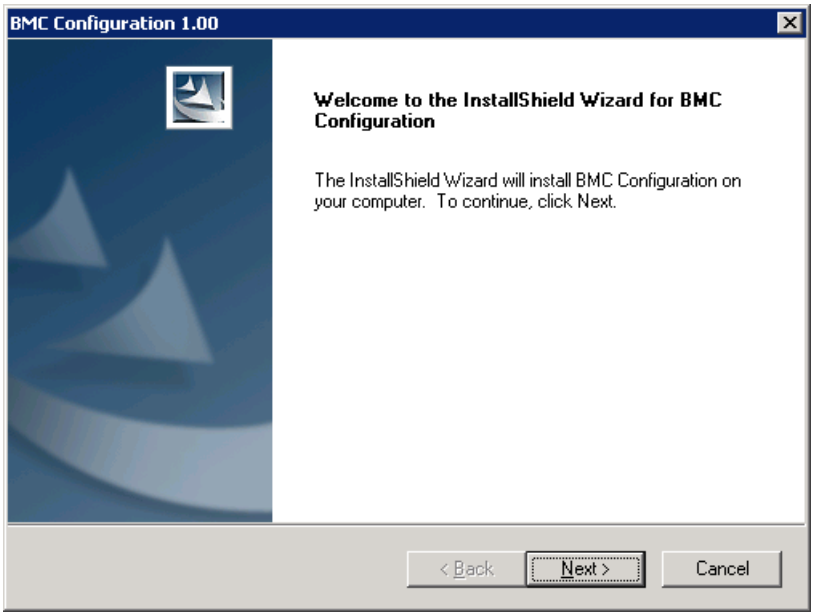
TIPS:

- Please refer to 5.1 BMC Configuration installation when you install it.

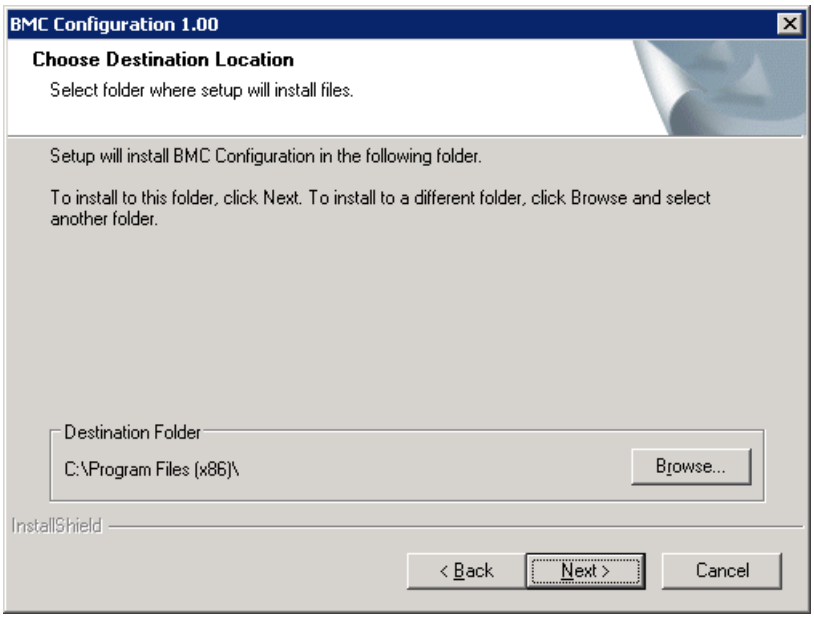
3.1.3 Install BMC Configuration

(1) Click "BMC Configuration" on the installation menu. . The "Download Files" dialog box will appear. Click [Open].

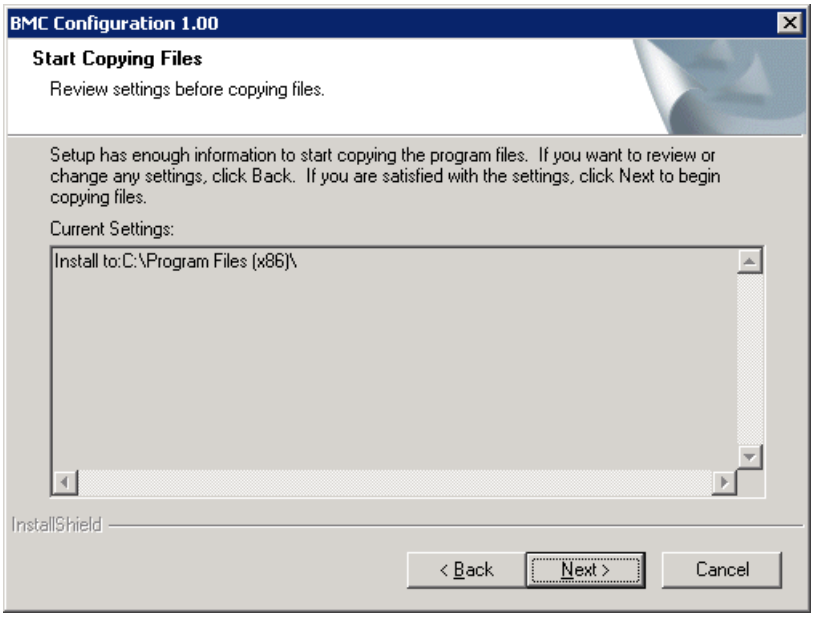
(2) The BMC Configuration installer is started. Click [Next].


BMC Configuration 1.00
Welcome to the InstallShield Wizard for BMC Configuration
The InstallShield Wizard will install BMC Configuration on your computer. To continue, click Next.
< Back
Next >
Cancel

(3) Enter a folder name to install. Click [Next].


BMC Configuration 1.00
Choose Destination Location
Select folder where setup will install files.
Setup will install BMC Configuration in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files (x86)\
Browse...
InstallShield
< Back
Next >
Cancel

(4) Confirm the installation settings, and click [Next]. The installation is started.


BMC Configuration 1.00
Start Copying Files
Review settings before copying files.
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
Install to:C:\Program Files (x86)\
InstallShield
< Back
Next >
Cancel

After the installation is completed, BMC Configuration is available.

3.2 BMC Configuration Uninstallation for Windows

Explain the uninstallation of BMC Configuration.

3.2.1 Check before uninstallation

Check the following:
-- Login to Windows as Administrator.

3.2.2 Uninstall BMC Configuration

Uninstall from the Windows menu [Control Panel] - [Add or Remove Programs]. Select [BMC Configuration] and click [Change/Remove] button. You can uninstall it by displayed direction.

CHECK:

- Close the dialog box of BMC Configuration if it has been opened, and then uninstall BMC Configuration.

3.3 BMC Configuration Installation for Linux

Explain the installation of BMC Configuration.

3.3.1 Check before installation

Check the followings:
-- See chapter 2.1 to check the system requirement of managed server and BMC Configuration.
-- Login to Linux as root user.

CHECK:

- BMC Configuration installer exists on following directory:
  If you install BMC Configuration by using downloaded modules:/bmc_config.
  If you install BMC Configuration by using NEC EXPRESSBUILDER:
  "EXPRESSBUILDER revision"/lnx/pp/bmc_config.
  (ex. 001/lnx/pp/bmc_config)

3.3.2 Copy and extract BMC Configuration installer

Copy the BMC Configuration installer (all files in /bmc_config) into any directory on the managed server.
The following is an example to copy into /usr/local/bin:

(1) Copy the all installer files to /usr/local/bin.
It is shown example that files is copied from NEC EXPRESSBUILDER to /use/local/bin directory.
(The mount path is dependent on the OS. Specify the right path.)

```
cp -r /mnt/cdrom/001/lnx/pp/bmc_config /usr/local/bin
```

(2) Move to the directory containing the installer.

```
cd /usr/local/bin/bmc_config
```

(3) Extract the installer.

```
tar xzvf BMCConfiguration-N.NN-x.tgz
```

"N.NN" in the example file name means the version.

TIPS:

- Please refer to 5.1 BMC Configuration installation when you install it.

3.3.3 Install BMC Configuration

(1) Move to the directory that the installer was extracted.

```
cd /usr/local/bin/bmc_config/BMCConfiguration-N.NN-x
```

"N.NN" in the example directory name means the version.

(2) Execute the shell for the installation.

```
./BMCConfiguration-N.NN-x.sh
```

"N.NN" in the example file name means the version.

(3) A confirmation message of BMC Configuration installation is displayed. Input "yes" and "Enter" key.
BMC Configuration is installed under /opt/nec/BMC_Configuration directory. If you input "no", the installation is not executed.

When the installation is completed, the following message is displayed.
"The installation of BMC Configuration is now completed."
After the installation is completed, BMC Configuration is available.

CHECK:

- Don't delete the files that are used to install, because you will use them to uninstall.

3.4 BMC Configuration Uninstallation for Linux

Explain the uninstallation of BMC Configuration.

3.4.1 Check before installation

Check the following:
-- Login to Linux as root user.

3.4.2 Uninstall BMC Configuration

(1) Move to the directory in which all installation files are copied.

```
cd /usr/local/bin/bmc_config/BMCConfiguration-N.NN-x
```

"N.NN" in the example directory name means the version.

(2) Execute the shell for uninstallation.

```
./BMCConfiguration-N.NN-x.sh
```

"N.NN" in the example file name means the version.

(3) A confirmation message of BMC Configuration uninstallation is displayed. Input "delete" and "Enter" key.

When the uninstallation is completed, the following message is displayed.
"The uninstallation of BMC Configuration is now completed."

4. Functions

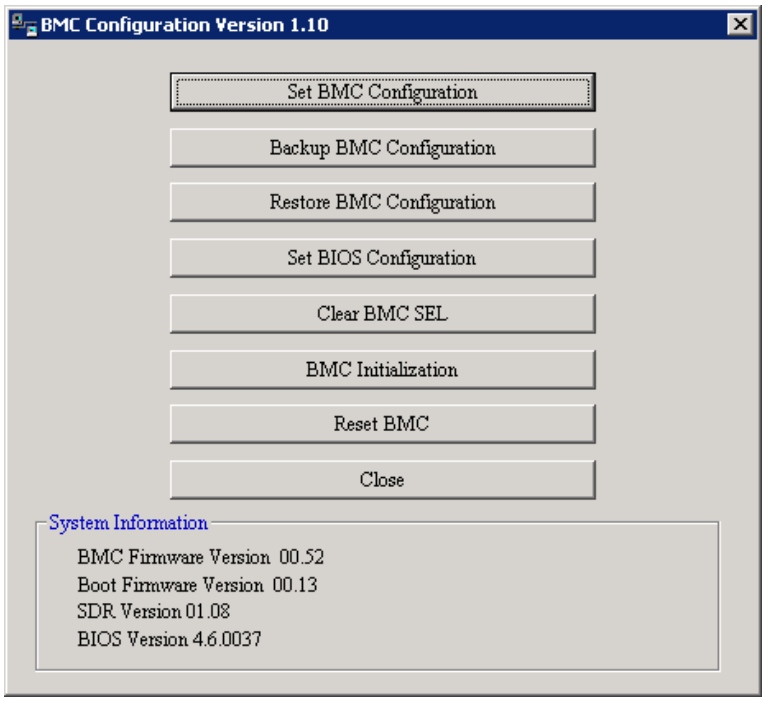
4.1 Start procedure

4.1.1 On Windows

After the installation is completed, do the following operation as Administrator to open the main dialog box of BMC Configuration.

- Click "BMC Configuration" - "BMC Configuration" from [start] on Windows

The following screen shows example.



TIPS:

- Refer to the following to see BMC Configuration help information.

  Click "BMC Configuration" - "BMC Configuration Help"
  from [start] on Windows.

4.1.2 On Linux

After the installation is completed, do the following operation as root user to open the setting function of BMC Configuration.

```
/opt/nec/BMC_Configuration/bmcconf
```

TIPS:

- Refer to the following to see BMC Configuration help information.

  Open the setting of BMC Configuration and press F12 key on the screen displayed "[F12] help" at the bottom.

4.1.3 On Off-line TOOL

You can open the setting function of BMC Configuration in Off-line TOOL as follows.

(1) The following message is displayed on the bottom of POST screen.

```
Press<F2> SETUP, <F3> Internal flash memory, <F4> ROM Utility, <F12> Network
```

(2) Press F4 key on this screen. If F4 key is entered, Keyboard type selection screen is displayed after POST screen, and the Off-line TOOL menu is displayed after selecting keyboard type.

(3) Select BMC Configuration.

TIPS:

- BMC Configuration in Off-line TOOL is integrated in the managed server by default.
- Refer to the following to see BMC Configuration help information.

  Start the tool and select Help menu, or press Home key or "?" key on the screen displayed "[Help:[Home or ?]]" at the bottom.

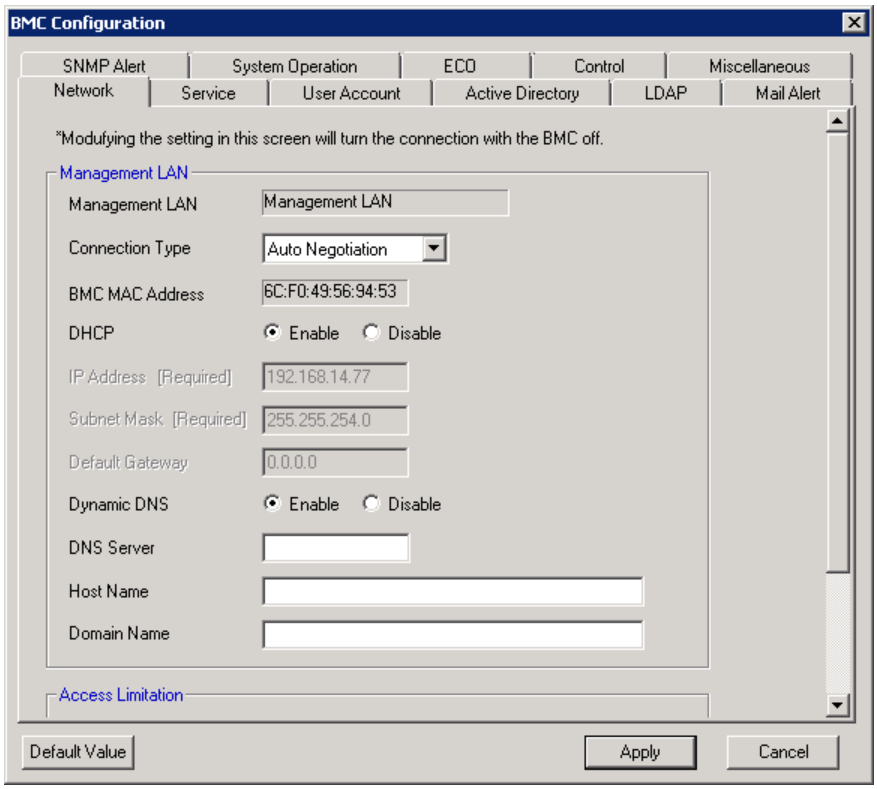
4.2 BMC Configuration Setting

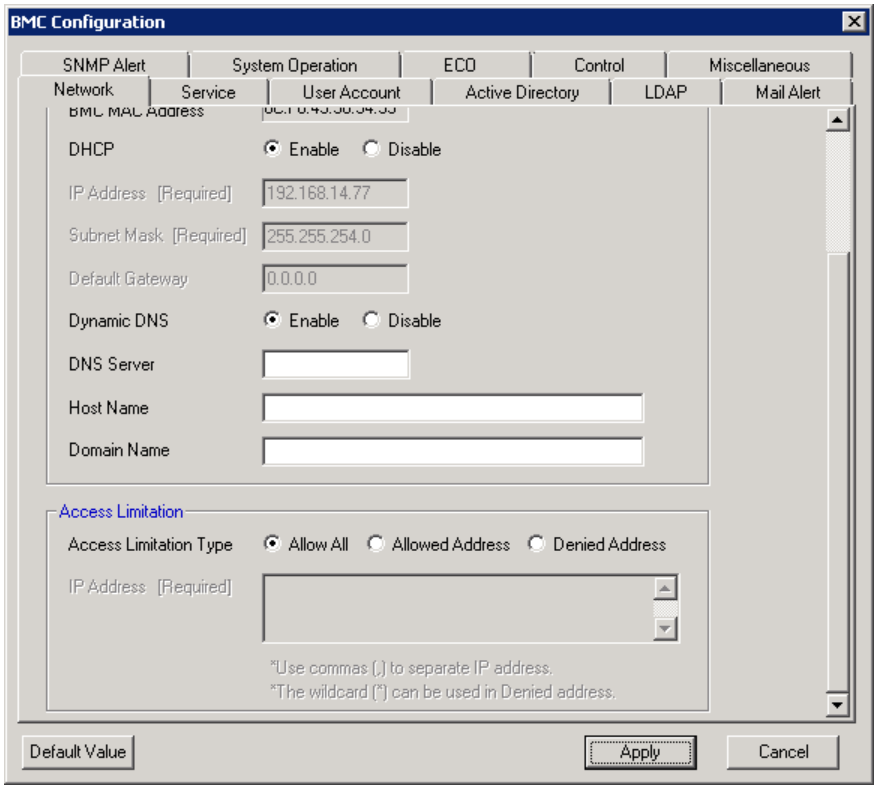
This chapter explains all the BMC Configuration information items. Refer to set more detailed settings.

Explain the settings with the screen of BMC Configuration for Windows.

4.2.1 Network

This screen displays and sets the network environment of BMC.





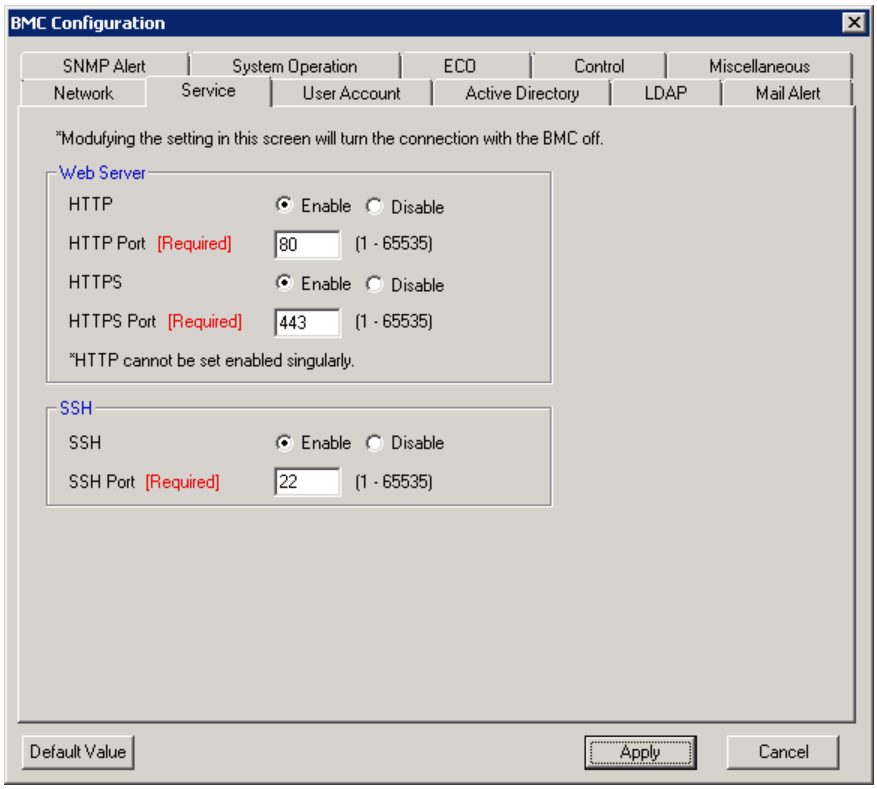
Item	Description	Default Value
Management LAN	Management LAN setting	
Management LAN	Set and display LAN port to communicate with BMC. You can modify this setting only on BMC Configuration of Off-line TOOL. *1 *2 Management LAN : LAN port for BMC exclusive use. Shared BMC LAN : LAN port of System (OS) is shared and used.	Management LAN
Connection Type	Set and display the connection type of managed server. When Management LAN is "Shared BMC LAN", you can modify this setting only on BMC Configuration of Off-line TOOL. *1 Auto Negotiation : Connecting by suitable setting. 100Mbps Full : Connecting by Full Duplex at speed of 100 Mbps. 100Mbps Half : Connecting by Half Duplex at speed of 100 Mbps. 10Mbps Full : Connecting by Full Duplex at speed of 10 Mbps. 10Mbps Half : Connecting by Half Duplex at speed of 10 Mbps.	Auto Negotiation
BMC MAC Address	MAC Address is displayed.	
DHCP	Determine whether to dynamically obtain an IP address from a DHCP server. If the item is set Enable and applied, BMC set the value obtained from DHCP server on "IP Address", "Subnet Mask" and "Default Gateway".	Blade Server: Enable Other server: Disable
IP Address	Set the BMC IP address of the managed server.*4	192.168.1.1

Item	Description	Default Value
Subnet Mask	Set the Subnet Mask of the managed server. *3 *4	255.255.255.0
Default Gateway	Set the Default Gateway IP address of the managed server. *4 If you set this item, it is necessary for applying configuration information that the gateway is connected on network.	0.0.0.0
Dynamic DNS	Determine whether to enable/disable of Dynamic DNS. *5	Disable
DNS Server	Set the DNS Server.	0.0.0.0
Host Name	Set the Host Name. *6 *7	Blank
Domain Name	Set the Domain Name. *7	Blank
Access Limitation	Access Limitation setting	
Access Limitation Type	Select the Access Limitation Type. Allow All : Access to BMC is not limited. Allow Address : Set the IP Address that is allowed to access BMC. Deny Address : Set the IP Address that is limited to access BMC.	Allow All
IP Address	Set the IP Address to allow or deny to access with BMC. *8 *9	Blank

*1: It is possible to set when the system supports change.
*2: If you modify this setting, "Reset BMC" is necessary on some systems. When set to "Shared BMC LAN", the management LAN port is disabled. When set to "Shared BMC LAN", the network performance may be reduced because the data of both LANs must be transmitted or received.
*3: When the Subnet Mask is wrong setting, error message, such as "Failed to apply configuration.", is displayed.
*4: It is possible to set when DHCP is "Disable".
*5: It is possible to set when DHCP is "Enable".
*6: The length of Host Name must be less than 64 characters. Host Name will be truncated to 63 characters, if you input over 63 characters.
*7: Host Name and Domain Name should be within total of 255 characters.
8: The range of IP address to "Allow" or "Deny" access is delimited by ",(Comma)". With regard to the setting of “Deny” access, "(Asterisk)" can be described as a wild-card. (ex: 192.168.1.*,192.168.2.1,192.168.2.254)
*9: It is possible to set when Access Limitation Type is "Allowed Address" or "Denied Address". The length must be less than 255 characters.

4.2.2 Service

This screen displays and sets the list of the service of BMC.

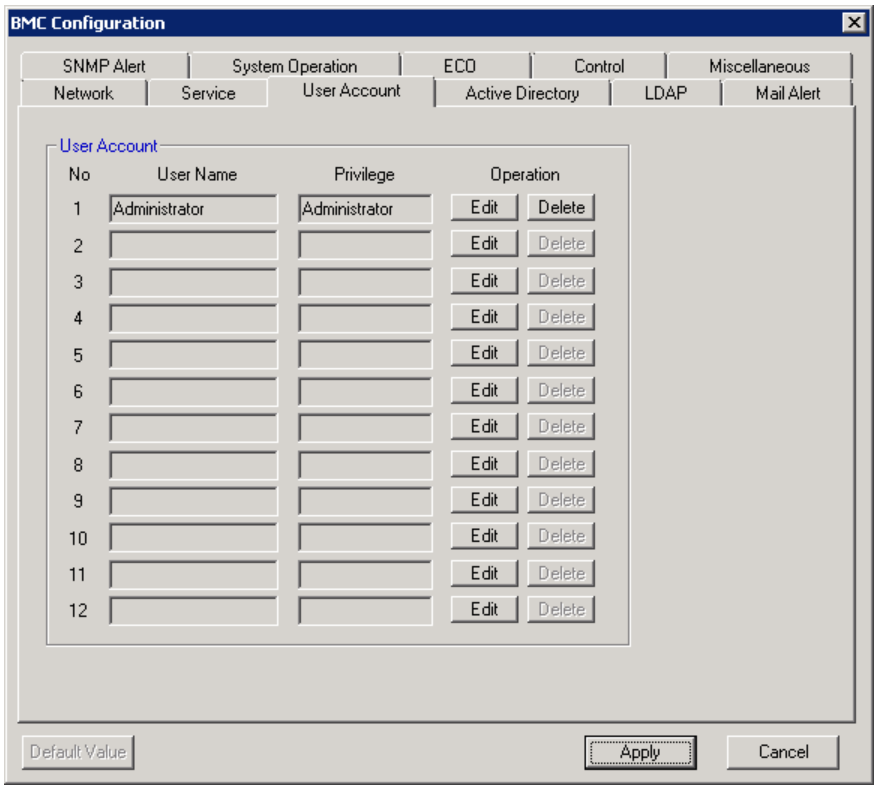


Item	Description	Default Value
Web Server	Web Server setting	
HTTP	Select Enable/Disable of HTTP. *1	Enable
HTTP Port	Set the HTTP Port. *2 *3	80
HTTPS	Select Enable/Disable of HTTPS.	Enable
HTTPS Port	Set the HTTPS Port. *2 *3	443
SSH	SSH setting	
SSH	Select Enable/Disable of SSH.	Enable
SSH Port	Set the SSH Port. *2 *3	22

*1: If HTTP is set Enable, HTTPS is also set Enable automaticlly. You can not set HTTP alone to enable.
*2: It is possible to set when each port is set to enable.
*3: Each port number must not overlap.

4.2.3 User Account

This screen displays and sets the users who use BMC. It is possible to register up to 12 users or less.



Item	Description
User Account	Displays a list of registered users.
No	The number allocated to user is displayed.
User Name	The user name is displayed.
Privilege	The privilege of the user is displayed.
Edit	Add or change user information.
Delete	Delete user information. *1

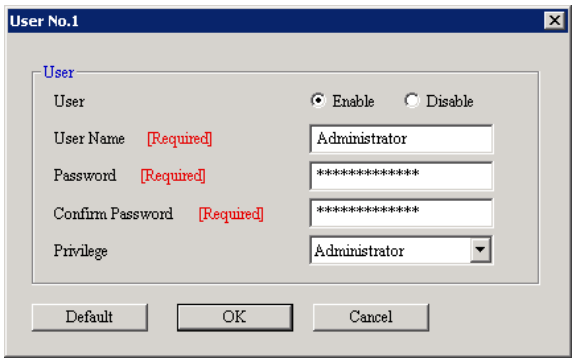
*1: It is possible to delete only for the existing user.

CHECK:

- In Offline-Tool, you can delete user information at the next user settings screen.

4.2.4 User

This screen sets the selected user.



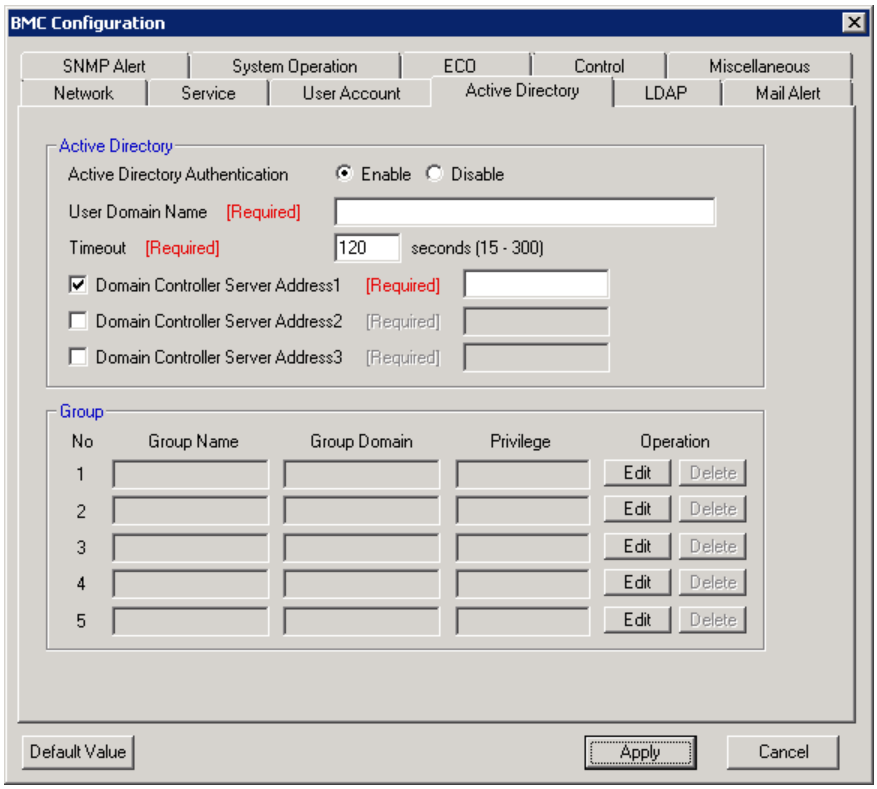
Item	Description	Default Value
User	User setting	
User	Select Enable/Disable of User. *1	Enable
User Name	Set the User Name. *2	Blank
Password	Set the Password of the User. *3	Blank
Confirm Password	Set same character string as the Password. *3	Blank
Privilege	Select the privilege of the User. *4 Administrator Operator User	Administrator

*1: It is possible to set only for the existing user.
*2: It is possible to set less than 15 half-size alphanumeric characters, "-(minus sign)" and "_(underscore)". "-(minus sign)" can not use top character of User Name. "root", "null", "MWA", "AccessByEM-Poem" and already registered name in other number can not use.
*3: It is possible to set less than 19 ASCII characters, except for " (space)", " "(quotation marks)", "&" , "?" , "=", "#" and "¥".
*4: The privilege is as follows:

Privilege	Description
Administrator	Users who have an administrative account and are allowed to perform any operation.
Operator	Users who can operate the system, except session management, registration of license, Remote KVM/Media, whole settings and update.
User	General users who are only allowed to access the IPMI Information.

4.2.5 Active Directory

This screen displays and sets the Active Directory.



Item	Description	Default Value
Active Directory	Active Directory setting	
Active Directory Authentication	Select Enable/Disable of Active Directory Authentication.	Disable
User Domain Name	Set the user domain name used by Active Directory Authentication. *1 *2	Blank
Timeout	Set the timeout period with domain controller. *1	120
Domain Controller Server 1	Select Enable/Disable of Domain Controller Server 1. *1 *3	Enable
Server Address 1	Set the IP Address of Domain Controller Server 1. *1 *4	Blank
Domain Controller Server 2	Select Enable/Disable of Domain Controller Server 2. *1 *3	Disable
Server Address 2	Set the IP Address of Domain Controller Server 2. *1 *4	Blank
Domain Controller Server 3	Select Enable/Disable of Domain Controller Server 3. *1 *3	Disable
Server Address 3	Set the IP Address of Domain Controller Server 3. *1 *4	Blank

Item	Description
Group *1	Displays a list of registered groups.
No	The number allocated to group is displayed.
Group Name	The group name is displayed.
Group Domain	The domain name of Active Directory is displayed.
Privilege	The privilege of the group is displayed.
Edit *1	Add or change group information.
Delete *1 *5	Delete group information.

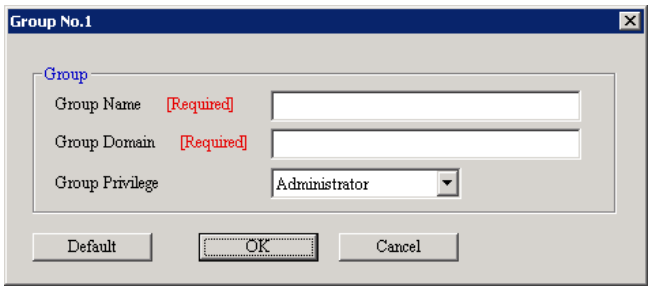
*1: It is possible to set when Active Directory Authentication is "Enable".
*2: It is possible to set less than 255 half-size alphanumeric characters, "-(minus sign)", "_(underscore)" and ".(period)".
*3: When Active Directory Authentication is enabled, one or more of the Domain Controller Server should be enable.
*4: It is possible to set when each Domain Controller Server is "Enable".
*5: It is possible to set only for the existing group.

CHECK:

- In Offline-Tool, you can delete group information at the next group settings screen.

4.2.6 Group

This screen sets the selected group.

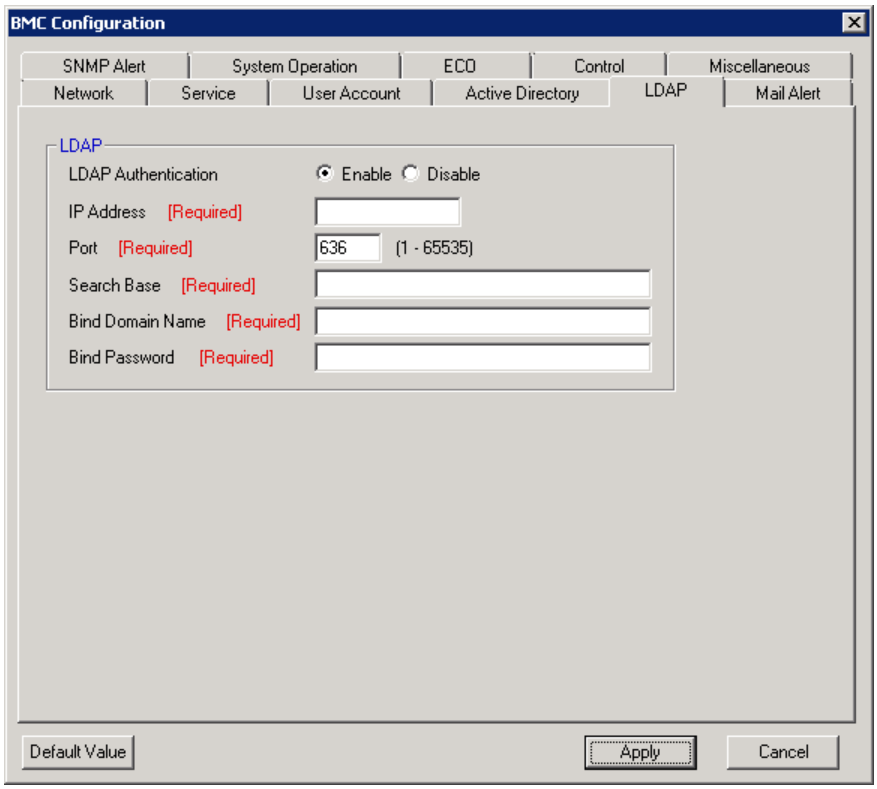


Item	Description	Default Value
Group	Group setting	
Group Name	Set the Group Name. *1	Blank
Group Domain	Set the Group Domain Name. *2	Blank
Privilege	Select the privilege of the Group. Administrator Operator User	Administrator

*1: It is possible to set less than 255 half-size alphanumeric characters, "-(minus sign)" and "_(underscore)".
*2: It is possible to set less than 255 half-size alphanumeric characters, "-(minus sign)", "_(underscore)" and ".(period)".

4.2.7 LDAP

This screen displays and sets the LDAP (Lightweight Directory Access Protocol).

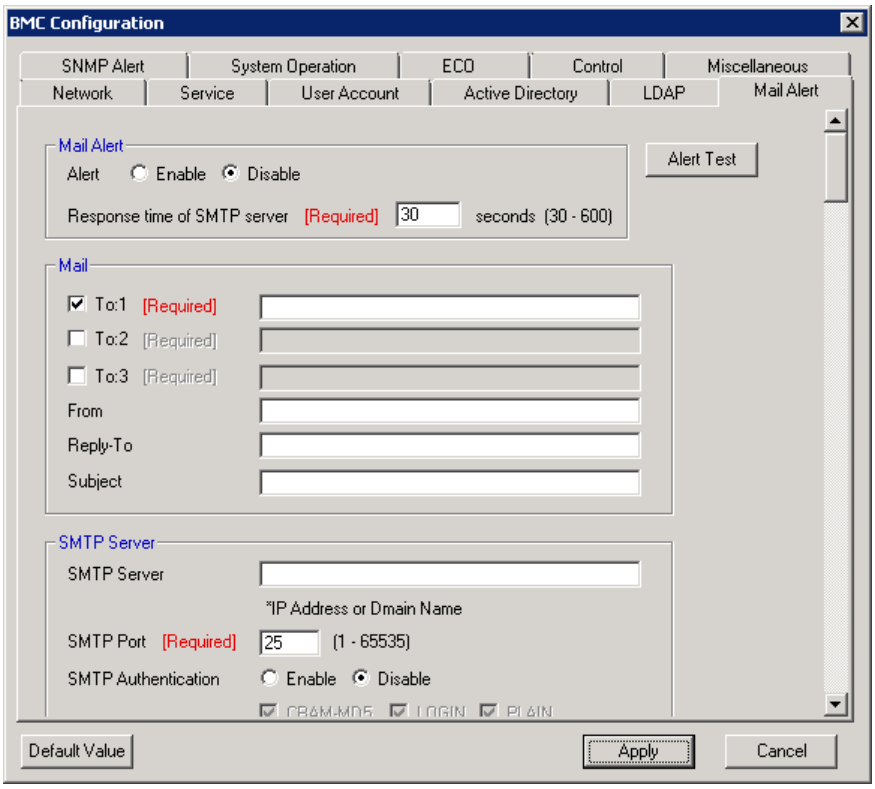


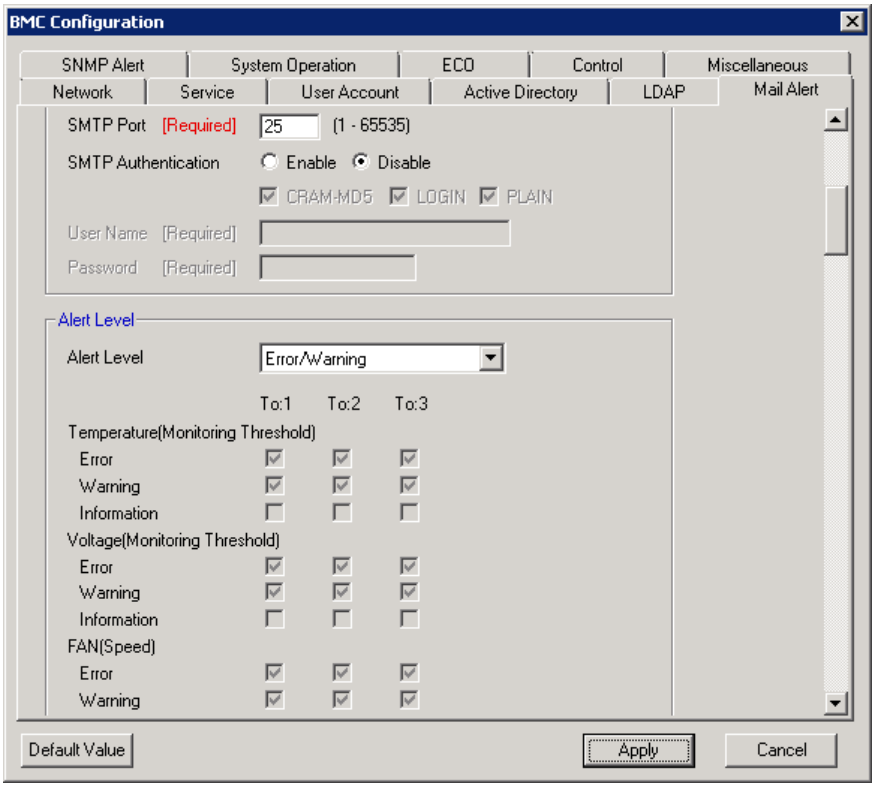
Item	Description	Default Value
LDAP	LDAP setting	
LDAP Authentication	Select Enable/Disable of LDAP Authentication.	Disable
IP Address	Set the IP Address. *1	0.0.0.0
Port	Set the LDAP Port. *1	636
Search Base	Set the Search Base used by LDAP Authentication. *1 *2	Blank
Bind Domain Name	Set the Domain Name used by LDAP Authentication. *1 *2	Blank
Bind Password	Set the Password used by LDAP Authentication. *1 *3	Blank

*1: It is possible to set when LDAP Authentication is "Enable".
*2: It is possible to set from 4 to 62 half-size alphanumeric characters, "-(minus sign)", "_(underscore)", ".(period)", ",(comma)"and "=".
*3: It is possible to set from 4 to 31 half-size alphanumeric characters, except for " "(quotation marks)", "#" and "¥".

4.2.8 Mail Alert

This screen displays and sets the alert by E-mail from BMC.





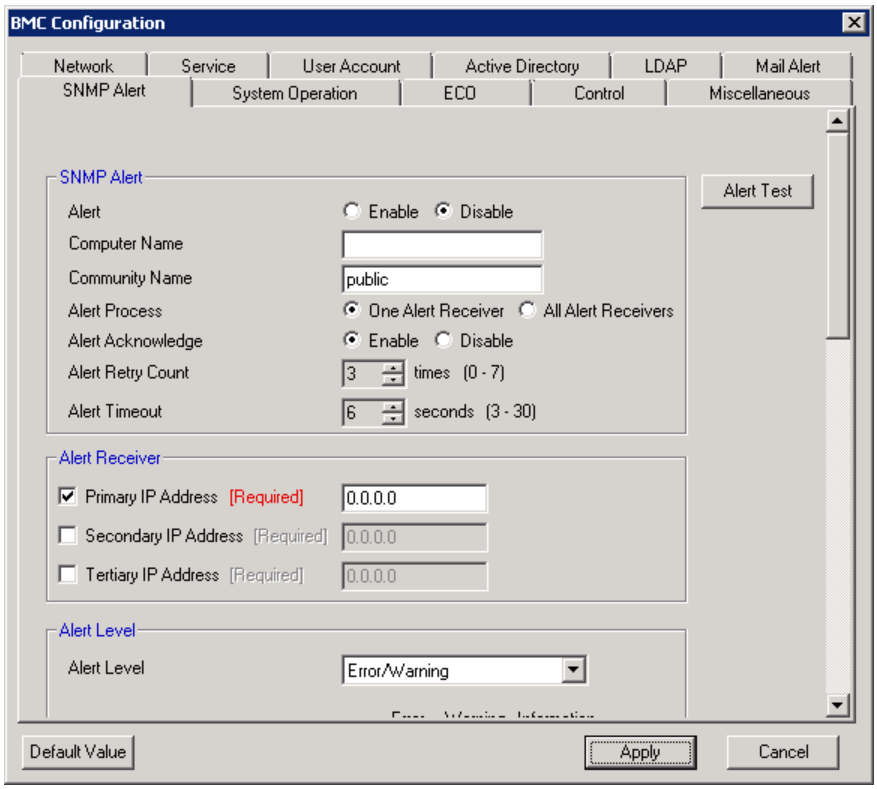
Item	Description	Default Value
Mail Alert	Mail Alert setting	
Alert	Select Enable/Disable of Mail Alert.	Disable
Response time of SMTP server	Set the timeout period until when the connection to SMTP server succeed by E-mail transmission.	30
Mail	Mail Header setting	
To:1	Select Enable/Disable of To:1. *1	Enable
Mail Address	Set the mail address of To:1. *2 *3	Blank
To:2	Select Enable/Disable of To:2. *1	Disable
Mail Address	Set the mail address of To:2. *2 *3	Blank
To:3	Select Enable/Disable of To:3. *1	Disable
Mail Address	Set the mail address of To:3. *2 *3	Blank
From	Set the From. *3	Blank
Reply-To	Set the Reply-To. *3	Blank
Subject	Set the Subject. *4	Blank
SMTP Server	SMTP Server setting	
SMTP Server	Set the SMTP Server. *5	0.0.0.0
SMTP Port	Set the SMTP Port.	25
SMTP Authentication	Select Enable/Disable of SMTP Authentication.	Disable
CRAM-MD5	Select Enable/Disable of CRAM-MD5. *6 *7	Enable
LOGIN	Select Enable/Disable of LOGIN. *6 *7	Enable
PLAIN	Select Enable/Disable of PLAIN. *6 *7	Enable
User Name	Set the SMTP User Name. *6 *8	Blank
Password	Set the SMTP User Password. *6 *9	Blank
Alert Level	Alert Level setting	
Alert Level	Set the kind of event to alert. *10	Error/ Warning
Alert Test	Execute the alert test by E-mail.	

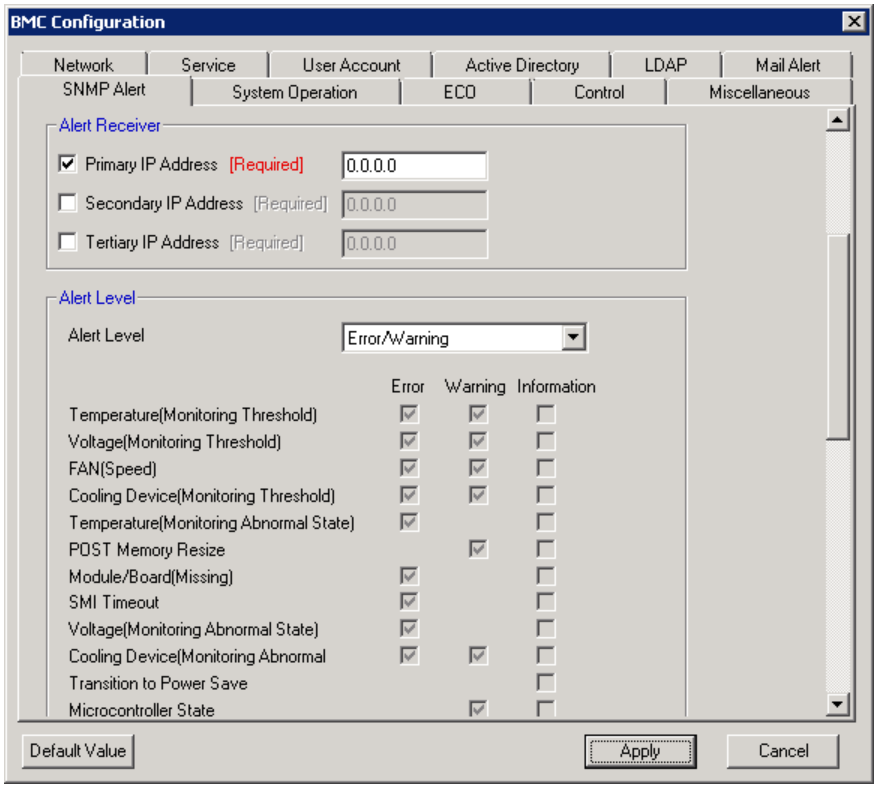
*1: When Mail Alert is enabled, one or more of the addresses should be enabled.
*2: It is possible to set when To:X is "Enable".
*3: It is possible to set less than 255 half-size alphanumeric characters and "-(minus sign)", "_(underscore)", ".(period)", "@(at mark)".
*4: It is possible to set less than 63 half-size alphanumeric characters, except for "+", " "(quotation marks)", "?", "=", "<", ">", "#" and "¥".
*5: It is possible to set full domain or IP Address less than 255 half-size alphanumeric characters and "-(minus sign)", "_(underscore)", ".(period)".
*6: It is possible to set when SMTP Authentication is "Enable".
*7: When SMTP Authentication is enabled, one or more of the authentic method should be enabled.
*8: It is possible to set less than 64 half-size alphanumeric characters, except for " (space)", " "(quotation marks)", "?" , "=", "<", ">", "#" and "¥".
*9: It is possible to set less than 19 half-size alphanumeric characters, except for " (space)", " "(quotation marks)", "?" , "=", "<", ">", "#" and "¥".
*10: The Alert Level is as follows:

Alert Level	Description
Error	When "Error" is detected in each sensor type, the alert is sent to the checked address.
Error/ Warning	When "Error" or "Warning" is detected in each sensor type, the alert is sent to the checked address.
Error/ Warning/ Information	When "Error", "Warning" or "Information" is detected in each sensor type, the alert is sent to the checked address.
Separate Setting	You can arbitrarily select the event and the address(To:X) to alert in each sensor type.

4.2.9 SNMP Alert

This screen displays and sets the alert by SNMP from BMC.





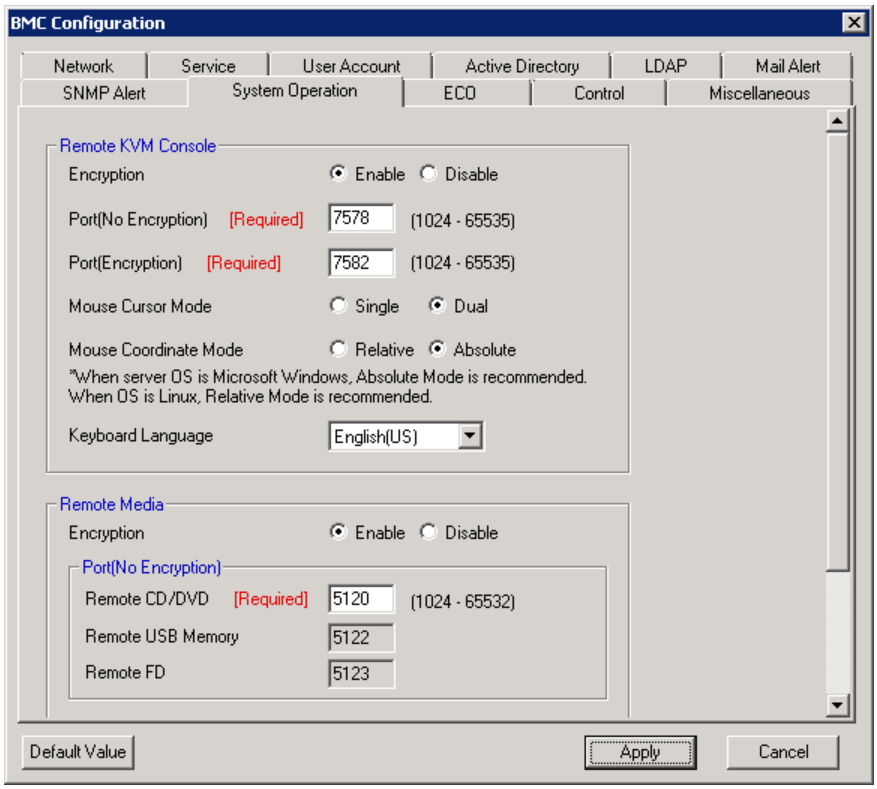
Item	Description	Default Value
SNMP Alert	SNMP Alert setting	
Alert*1	Select Enable/Disable of SNMP Alert.	Disable
Computer Name	Set the Computer Name. *2	Blank
Community Name	Set the Community Name. *2	public
Alert Process	Select One Alert Receiver/All Alert Receiver of Alert Process.	One Alert Receiver
Alert Acknowledge	Select Enable/Disable of Alert Acknowledge.	Enable
Alert Retry Count	Set the count of Alert retry. *3	3
Alert Timeout	Set the seconds to alert timeout. *3	6
Alert Receiver	Alert Receiver setting.	
Primary IP Address	Select Enable/Disable of Primary IP Address. *4	Enable
IP Address	Set the IP Address of Primary. *5	0.0.0.0
Secondary IP Address	Select Enable/Disable of Secondary IP Address. *4	Disable
IP Address	Set the IP Address of Secondary. *5	0.0.0.0
Tertiary IP Address	Select Enable/Disable of Tertiary IP Address. *4	Disable
IP Address	Set the IP Address of Tertiary. *5	0.0.0.0
Alert Level	Alert Level setting	
Alert Level	Set the kind of event to alert. *6	Error/ Warning
Alert Test	Execute the alert test by SNMP.	

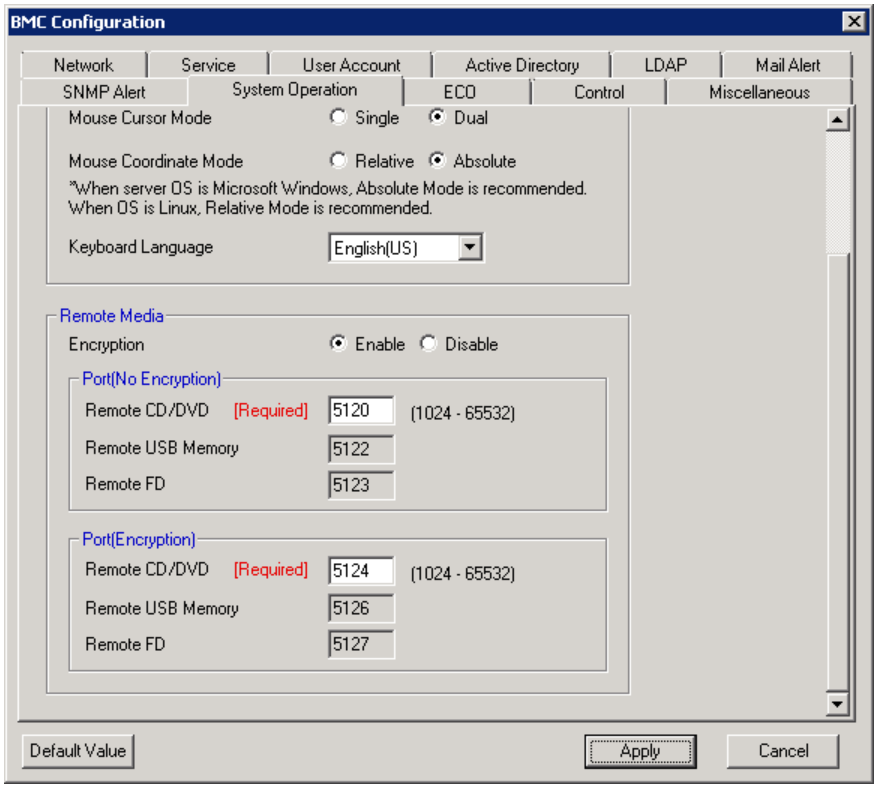
*1: When PEF(Platform Event Filter) setting is "Disable", it can not alert.
*2: It is possible to set less than 16 half-size alphanumeric characters.
*3: It is possible to set when Alert Acknowledge is "Enable".
*4: When SNMP Alert is enabled, one or more of the addresses should be enable.
*5: It is possible to set when each Alert Receiver is"Enable".
*6: The Alert Level are as follows:

Alert Level	Description
Error	When "Error" is detected in each sensor type, the alert is sent to the checked address.
Error/ Warning	When "Error" or "Warning" is detected in each sensor type, the alert is sent to the checked address.
Error/ Warning/ Information	When "Error", "Warning" or "Information" is detected in each sensor type, the alert is sent to the checked address.
Separate Setting	You can arbitrarily select the event to alert in each sensor type.

4.2.10 System Operation

This screen displays and sets the Remote KVM console and the Remote Media.



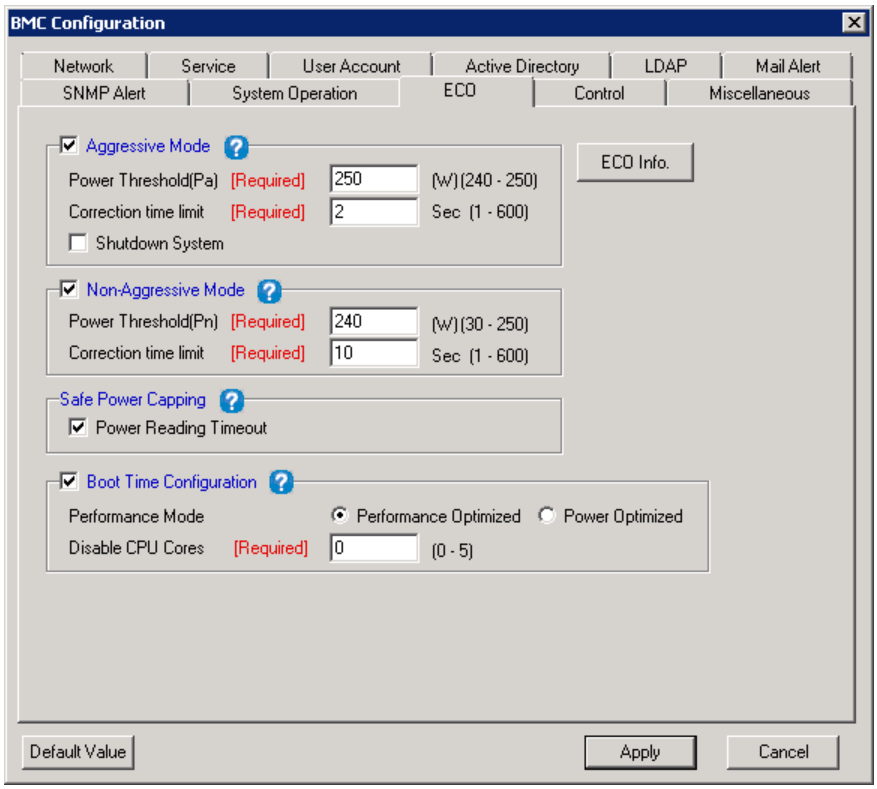


Item	Description	Default Value
Remote KVM Console	Remote KVM Console setting	
Encryption	Select Enable/Disable of Encryption.	Enable
Port (No Encryption)	Set the Remote KVM Console Port when Encryption is enabled. *1	7578
Port (Encryption)	Set the Remote KVM Console Port when Encryption is disabled. *1	7582
Mouse Cursor Mode	Select the mode of the mouse cursor. Single Dual	Dual
Mouse Coordinate Mode	Select the mode of expression of coordinates of the mouse cursor. *2 Relative Absolute	Windows: Absolute Linux, Offline: Relative
Keyboard Language	Select the Keyboard Language. Japanese(JP) English(US) French(FR) German(DE)	English(US) *3
Remote Media	Remote Media setting	
Encryption	Select Enable/Disable of Encryption.	Enable
Remote CD/DVD Port (No Encryption)	Set the Remote CD/DVD Port when Encryption is enabled. *1	5120
Remote USB Memory Port (No Encryption)	Remote USB Memory Port is displayed. (Remote CD/DVD Port + 2)	
Remote FD Port (No Encryption)	Remote FD Port is displayed. (Remote CD/DVD Port + 3)	
Remote CD/DVD Port (Encryption)	Set the Remote CD/DVD Port when Encryption is disabled. *1	5124
Remote USB Memory Port (Encryption)	Remote USB Memory Port is displayed. (Remote CD/DVD Port + 2)	
Remote FD Port (Encryption)	Remote FD Port is displayed. (Remote CD/DVD Port + 3)	

*1: Each port number must not overlap.
*2: When OS is Windows, the Absolute mode is recommended. The Relative mode is recommended for Linux.
*3: When the language of OS is Japanese, the default value is Japanese(JP).

4.2.11 ECO

This screen displays and sets the items concerning the power consumption and the system load.



Item	Description	Default Value
Aggressive Mode	Aggressive Mode brings the system power consumption under the specified upper limit threshold. This function reduces power consumption by changing CPU clock, throttling CPU clock and throttling Memory clock instead of lowering the system performance. If the power consumption has been exceeded over the Power Threshold(Pa) during the period specified in the Correction time limit, it will be able to generate System Event Log, send alert, and Shutdown System.	
Aggressive Mode	Select Enable/Disable of Aggressive Mode.	Disable
Power Threshold(Pa)	Set the Power consumption upper limit threshold of Aggressive Mode. The range is from AAA to Maximum Configuration of During Operation.[Watt] *1 *2	Maximum Configuration of During Operation
Correction time limit	Set the maximum time to take corrective actions in order to bring the system power consumption back to the specified Power Threshold(Pa) before generating System Event Log, sending alert and Shutdown System. The range is from NNN to 600.[Sec] *1 *3	2
Shutdown System	Select Enable/Disable of the action if the power consumption has been exceeded over the Power Threshold(Pa) during the period specified in the Correction time limit. *1	Disable

Item	Description	Default Value
Non- Aggressive Mode	Non-Aggressive Mode brings the system power consumption under the specified upper limit threshold without extremely decreasing system performance. This function reduces power consumption by changing only CPU clock in order to reduce the deterioration of the system performance compared with Aggressive Mode. If the power consumption has been exceeded over the Power Threshold(Pn) during the period specified in the Correction time limit, it will be able to generate System Event Log and send alert.	
Non-Aggressive Mode	Select Enable/Disable of Non-Aggressive Mode.	Disable
Power Threshold(Pn)	Set the Power consumption upper limit threshold of Non-Aggressive Mode. The range is from Minimum Configuration of Idle to BBB.[Watt] *4 *5	Power Threshold(Pa) - 10 or Minimum Configuration of Idle + 10, whichever is greater.
Correction time limit	Set the maximum time to take corrective actions in order to bring the system power consumption back to the specified Power Threshold(Pn) before generating System Event Log and sending alert. The range is from 1 to 600.[Sec] *4	10
Safe Power Capping	Safe Power Capping brings the system power consumption down forcibly when the system is unable to obtain the power readings. This function is considered for the case where the sharp increase of power consumption causes circuit breaker tripping while the system power consumption is not readable.	
Safe Power Capping (Power Reading Timeout)	Select Enable/Disable of Safe Power Capping.	Disable
Boot Time Configuration *6	Boot Time Configuration can set the performance of the system in booting. Also can set disable CPU cores per sockets.	
Boot Time Configuration	Select Enable/Disable of Boot Time Configuration.	Disable
Performance Mode	Select the performance of the system in booting. *7 Performance Optimized Power Optimized	Performance Optimized
Disable CPU Cores	Set the CPU Core number(s) to disable. *7	0
ECO Info.	The reference value and the statistics value of the managed server are displayed.	

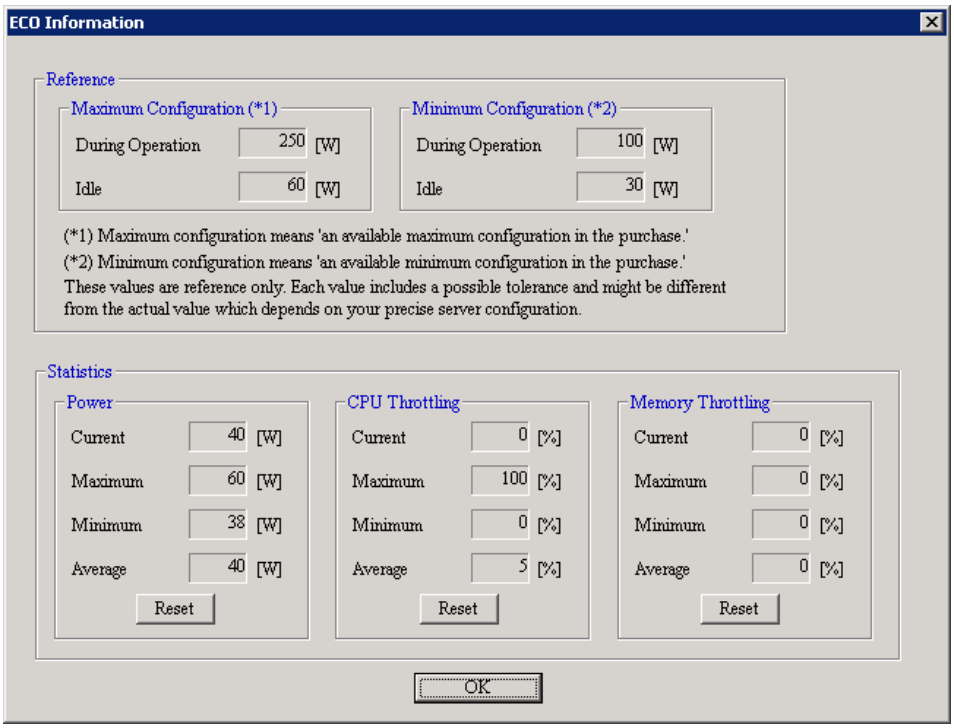
*1: It is possible to set when Aggressive Mode is "Enable".
*2: AAA is Minimum Configuration of Idle or "Power Threshold(Pn)".
*3: When Power Threshold(Pa) is not equal to Power Threshold(Pn), NNN is "1". When Power Threshold(Pa) is equal to Power Threshold(Pn), NNN is "Correction time limit" of Non-Aggressive Mode.
*4: It is possible to set when Non-Aggressive Mode is "Enable".
*5: BBB is Maximum Configuration of During Operation or "Power Threshold(Pa)".
*6: It is not displayed when the system does not support this function.
*7: It is possible to set when Boot Time Configuration is "Enable".

IMPORTANT:

- The ECO screen is not displayed if the managed server does not support this function.

4.2.12 ECO Information

This screen displays the reference value and the statistics value of the managed server according to its HW configuration and system load.

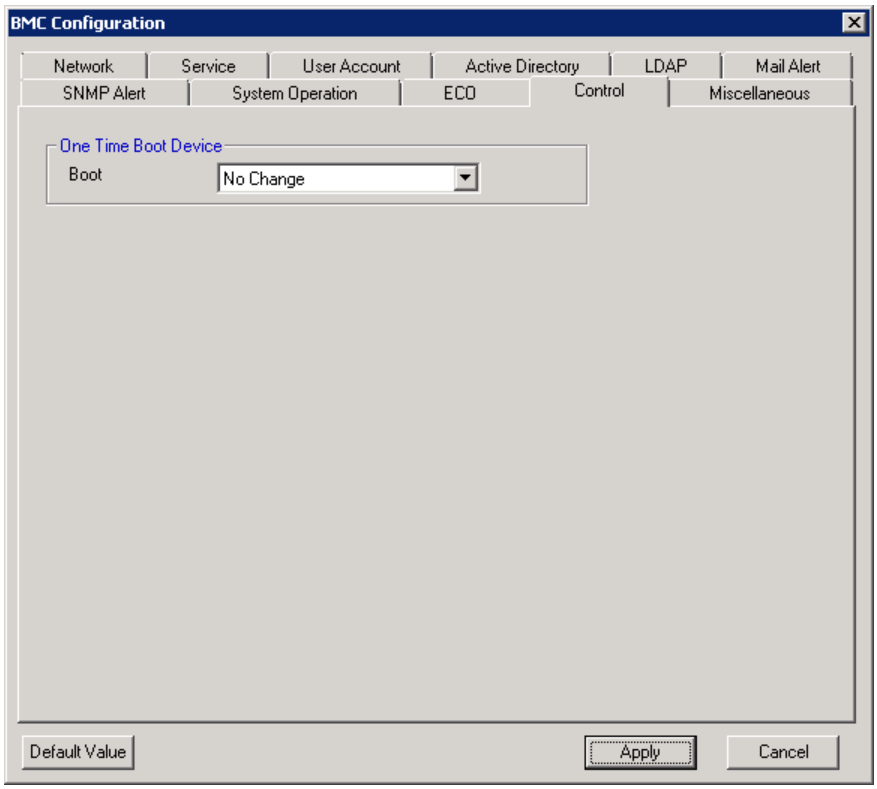


Item	Description
Maximum Configuration *1	An available maximum configuration in the model.
During Operation	At high system load.
Idle	When only power supply ON.
Minimum Configuration *1	An available minimum configuration in the model.
During Operation	At system high load.
Idle	When only power supply ON.
Power	The power consumption of the managed server is displayed.
Current	Present power consumption.
Maximum	Maximum power consumption.
Minimum	Minimum power consumption.
Average	Average value of power consumption.
CPU Throttling *2	CPU throttling rate of the managed server is displayed.
Current	Present CPU throttling rate.
Maximum	Maximum CPU throttling rate.
Minimum	Minimum CPU throttling rate.
Average	Average value of CPU throttling.
Memory Throttling *2 *3	Memory Throttling rate of the managed server is displayed.
Current	Present Memory Throttling rate.
Maximum	Maximum Memory Throttling rate.
Minimum	Minimum Memory Throttling rate.
Average	Average value of Memory Throttling.
Reset	The statistics values are reset.

*1: These values are reference purpose only. Each value might be different from the actual value which depends on your precise server configuration.
*2: Technology that decreases frequency or duty cycle of clock, and suppresses power consumption.
*3: It is not displayed when the system does not support this function.

4.2.13 Control

Control the managed server. This setting is applied at the next booting time of the managed server.



Item	Description	Default Value
One Time Boot Device	One Time Boot Device setting	
Boot Device *1	Select the Device used at next boot.	No Change

*1: The Boot Devices are as follows:

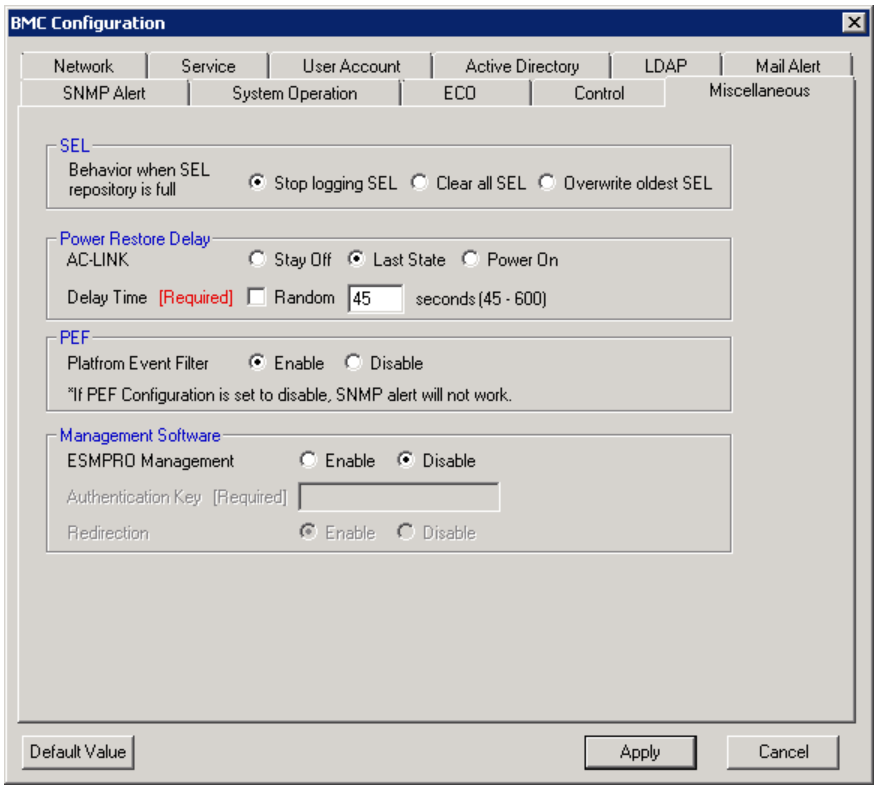
Boot Device	Description
No Change	It follows the setting of System BIOS of the managed server.
PXE	PXE Boot is done.
HDD	It starts from the hard disk connected to the managed server.
CD/DVD	It starts from the CD/DVD drive connected to the managed server.
Remote FD	It starts from the FD drive (media) connected by the remote media function.
Remote CD/DVD	It starts from the CD/DVD drive (media) connected by the remote media function.
Remote USB Memory	It starts from USB Memory connected by the remote media function.
FD	It starts from the FD drive or the removable mass storage connected to the managed server.

CHECK:

- This setting item does not exist in Off-line TOOL.

4.2.14 Miscellaneous

This screen displays and sets the various functions of BMC.



Item	Description	Default Value
SEL	SEL setting	
Behavior when SEL repository is full	Select the Behavior when SEL repository is full. *1 Stop logging SEL : SEL is not recorded any more. Clear all SEL : Delete all SEL and record SEL newly. Overwrite oldest SEL : Old SEL is overwritten with new SEL.	Stop logging SEL
Power Restore Delay	Power Restore Delay setting	
AC-Link	Select the AC-Link setting. Stay Off : DC is not turned on. Last State : It becomes the same as time when AC was turned off. Power On : DC on always.	Last State *2
Delay Time	Set the value or specify the Random. The range is from "Minimum value" to "600"[Sec], *3	Minimum value
PEF	PEF setting	
Platform Event Filter	Select Enable/Disable of Platform Event Filter. *4	Enable
Management Software	Management Software setting	

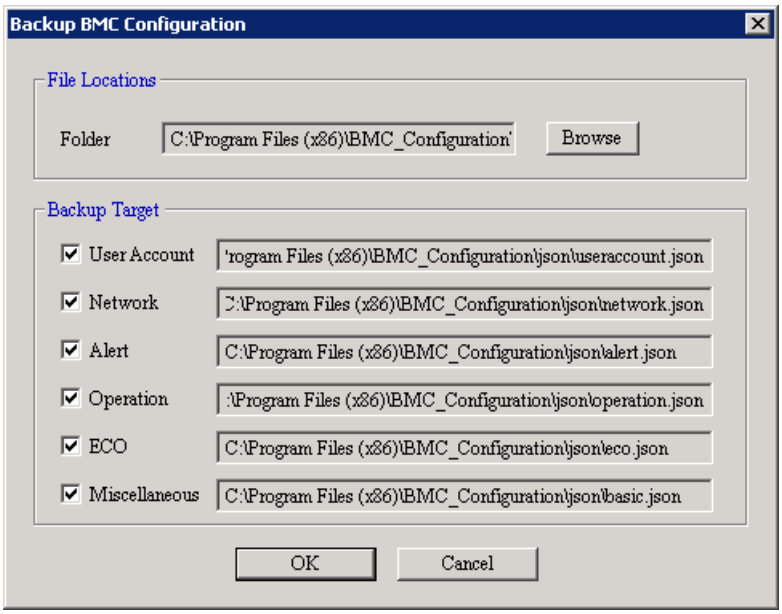
Item	Description	Default Value
ESMPRO Management	Select Enable/Disable of ESMPRO Management. *5	Current value
Authentication Key	Set the Authentication Key. *6 *7	guest
Redirection	Select Enable/Disable of Redirection. *6 If Redirection is set to "Enable", BIOS Redirection Port in Console Redirection Configuration of BIOS is set to "Serial Port B".	Enable

*1: When this item is changed to/from "Overwrite oldest SEL", all log records in the SEL Repository are cleared.
*2: When the "Standby Power Save" function of System BIOS is Enable, it is set to "Power On". And the default value is changed to "Power On".
*3: It is not possible to set when AC-Link is "Stay Off" or the system is Blade Server. Delay time from turning on AC to turning on DC is specified. It is possible to set up to 600(seconds). Minimum value is different according to the system. It is possible to set "Random" when the system supports it.
*4: "Enable" and "Disable" of the report function from BMC are set. It makes SNMP Alert be impossible when it sets to "Disable".
*5: When BMC can be managed directly from NEC ESMPRO Manager (Ver.5.4 or later), it must be set to "Enable". If it sets to "Enable", Authentication Key also must be set.
*6: It is possible to set when NEC ESMPRO Management is set "Enable".
*7: It is Authentication key when managing from NEC ESMPRO Manager (Ver.5.4 or later). It is possible to set less than 16 half-size alphanumeric characters.

CHECK:
- Power Restore Delay settings do not exist in Off-line TOOL.

4.3 Backup BMC Configuration

Back up the BMC settings to files. Select the back up target and click [OK].



Item	Description
File Locations	Set the location of backup files.
Folder	The preservation folder of the file is displayed.
Browse	It changes the preservation folder.
Backup Target	Select the backup target.
User Account	Select whether backup User Account settings or not, and display the backup file name.
Network	Select whether backup Network settings or not, and display the backup file name.
Alert	Select whether backup Alert settings or not, and display the backup file name.
Operation	Select whether backup Operation settings or not, and display the backup file name.
ECO *1	Select whether backup ECO settings or not, and display the backup file name.
Miscellaneous	Select whether backup Miscellaneous settings or not, and display the backup file name.

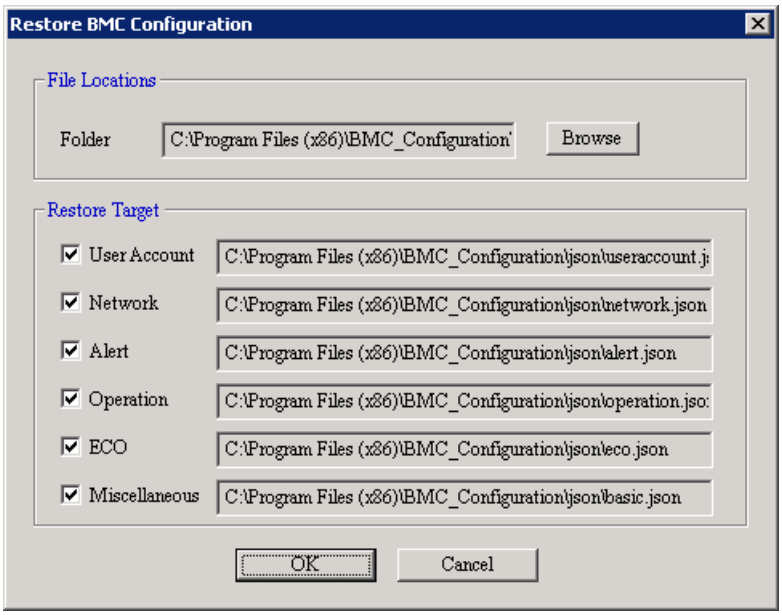
*1: It is not displayed when the system does not support this function.

CHECK:

- Off-line TOOL has no backup function.

4.4 Restore BMC Configuration

Restore the BMC settings from files. Select the restore target and click [OK].



Item	Description
File Locations	Set the locations of files.
Folder	The preservation folder of the file is displayed.
Browse	It changes the preservation folder.
Restore Target	Select the restore target.
User Account	Select whether restore User Account settings or not. Only when the target backup file exists, the file name is displayed and able to be selected.
Network	Select whether restore Network settings or not. Only when the target backup file exists, the file name is displayed and able to be selected.
Alert	Select whether restore Alert settings or not. Only when the target backup file exists, the file name is displayed and able to be selected.
Operation	Select whether restore Operation settings or not. Only when the target backup file exists, the file name is displayed and able to be selected.
ECO *1	Select whether restore ECO settings or not. Only when the target backup file exists, the file name is displayed and able to be selected.
Miscellaneous	Select whether restore Miscellaneous settings or not. Only when the target backup file exists, the file name is displayed and able to be selected.

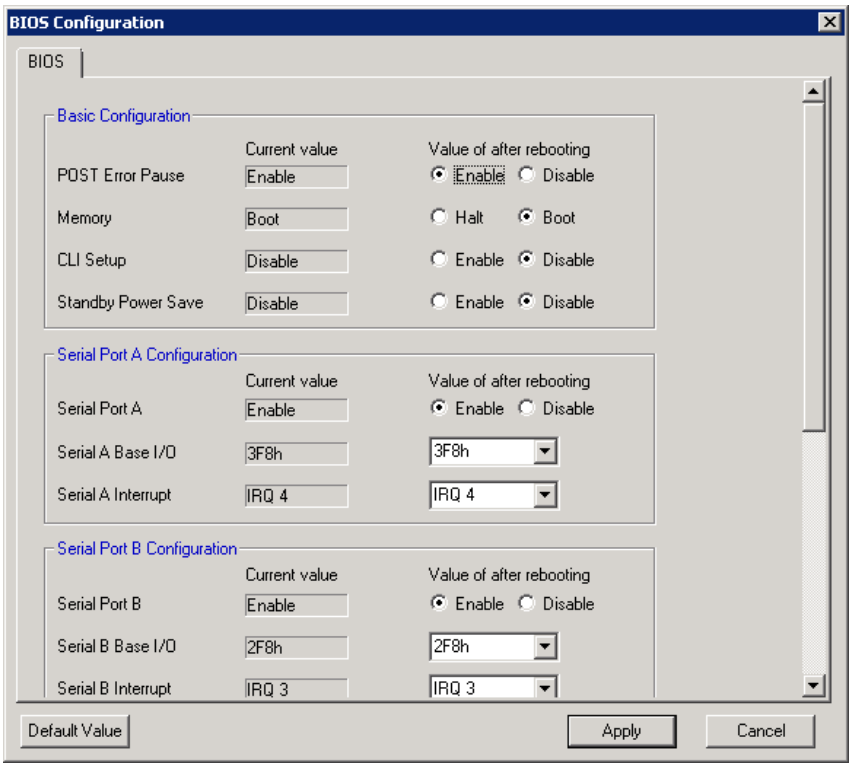
*1: It is not displayed when the system does not support this function.

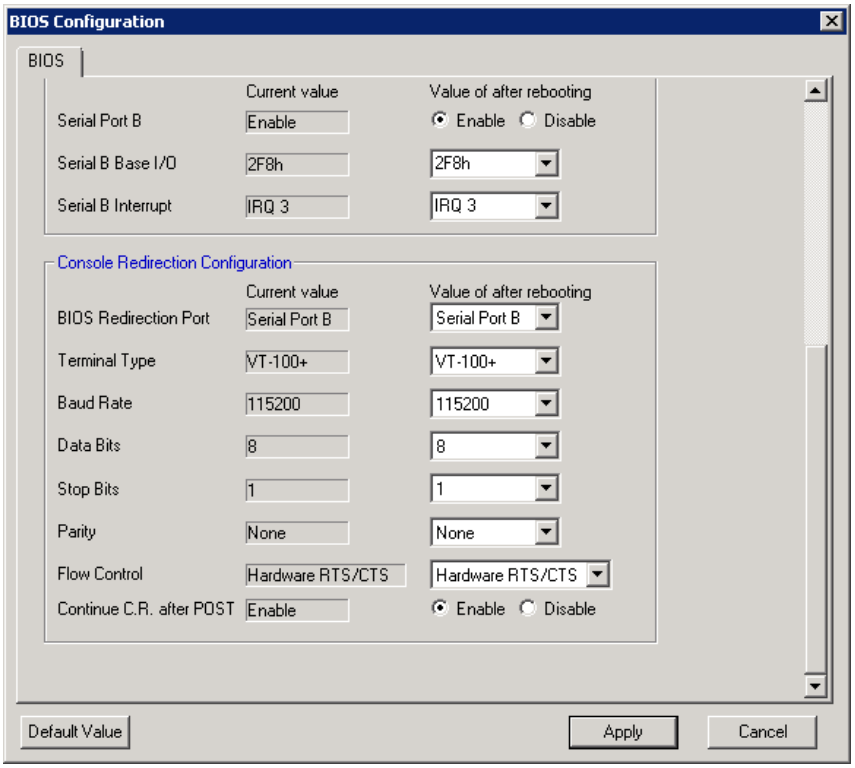
CHECK:

- Off-line TOOL has no restore function.

4.5 System BIOS Settings

This screen displays and sets System BIOS settings of the server. Please refer to the User's Guide of the managed server for details of the item.
This setting is applied at the next booting time of the managed server.





Item	Description	Default Value *1
Basic Configuration	Basic Configuration setting	
POST Error Pause	Select Enable/Disable of POST Error Pause.	Enable
Memory Error	Select Halt/Boot of Memory Error.	Boot
CLI Setup	Select Enable/Disable of CLI Setup.	Disable
Standby Power Save	Select Enable/Disable of Standby Power Save.	Disable
Serial Port A Configuration	Serial Port A Configuration setting	
Serial Port A	Select Enable/Disable of Serial Port A.	Enable
Serial A Base I/O	Select Base I/O Address of Serial Port A. It must be different from Serial Port B.	3F8h
Serial A Interrupt	Select IRQ of Serial Port A. It must be different from Serial Port B.	IRQ 4
Serial Port B Configuration	Serial Port B Configuration setting	
Serial Port B	Select Enable/Disable of Serial Port B.	Enable
Serial B Base I/O	Select Base I/O Address of Serial Port B. It must be different from Serial Port A.	2F8h
Serial B Interrupt	Select IRQ of Serial Port B. It must be different from Serial Port A.	IRQ 3
Console Redirection Configuration	Console Redirection Configuration setting	
BIOS Redirection Port	Select BIOS Redirection Port. You can not select “Disable” Port.	Disabled
Terminal Type	Select Terminal Type.	VT-100+
Baud Rate	Select Baud Rate.	115200
Data Bits	Select Data Bits.	8
Stop Bits	Select Stop Bits	1
Parity	Select Parity.	None
Flow Control	Select Flow Control.	Hardware RTS/CTS
Continue C.R. after POST	Select Enable/Disable of Continue Console Redirection after POST.	Enable

*1: The value might be different according to the system.

CHECK:

- This setting item does not exist in Off-line TOOL.

4.6 Clear BMC SEL

If you select "Clear BMC SEL" on the starting screen, you can clear all records of System Event Log.

4.7 BMC Initialization

If you select "BMC Initialization" on the starting screen, you can restore all of BMC Configuration parameters to the default settings except for the part. It will take about one minute to restart BMC. Please refer to 5.9 Default setting for details of the parameters after executing "BMC Initialization".

IMPORTANT:

- This operation may cause data destruction.

CHECK:

- The following settings are not initialized.
  - ECO
  - Control
  - SEL and Power Restore Delay in Miscellaneous

4.8 Reset BMC

If you select "Reset BMC" on the starting screen, you can reset BMC without rebooting system. BMC It will take about one minute to restart BMC.

IMPORTANT:

- Please use it when you can not operate the BMC functions correctly or if necessary.
- This operation does not clear the configuration settings.

5. Precautions for Use

5.1 BMC Configuration installation

-- BMC Configuration Installer (Windows & Linux) can not downgrade to the older version. If you want to use the older version, uninstall the current version and then install older version.
Note: All the registered information will be deleted as the result of the uninstalling.

-- BMC Configuration (Windows) Installer may indicate a message that requests some disk if you upgrade the BMC Configuration with the installer on CD-ROM/DVD-ROM. In this case, copy the installer on the HDD and then upgrade.

5.2 HTTP / HTTPS settings

-- HTTP alone can not be set to "Enable". When HTTP is set to "Enable", HTTPS is also set to "Enable" automatically.

5.3 Redirection setting

-- If Redirection of Management Software setting in Miscellaneous is applied to "Enable", the Value of after rebooting of BIOS Redirection Port in BIOS Console Redirection Configuration is set to "Serial Port B".

5.4 PEF setting and SNMP Alert setting

-- If Platform Event Filter in Miscellaneous is applied to "Disable", SNMP Alert is set to "Disable". And if SNMP Alert is applied to "Enable", Platform Event Filter is set to "Enable".

5.5 Alert form BMC

-- In the case that the item "Alert" on BMC Configuration is enabled, BMC will alert directly to the specified alert receiver when the event specified in Alert Level is occurred. If NEC ESMPRO Manager (Ver.5.4 or later) or NEC ESMPRO Manager Association Module is installed on the alert receiver, the SNMP alert from BMC is registered on NEC ESMPRO AlertManager.

-- Sending the alert from BMC depends on exist of NEC ESMPRO Agent.
(1) In the case of NEC ESMPRO Agent has been installed on the managed server.
If OS does not run on the managed server, BMC send the alert when the specified event happens.
After OS runs and NEC ESMPRO Agent starts, BMC does not send the alert even if the event happens, because NEC ESMPRO Agent sends the alert.

(2) In the case of NEC ESMPRO Agent has not been installed on the managed server.
BMC sends the alert whenever the specified event happens.

5.6 Alert Test

-- Please send a test alert after completing all the settings of the Alert Configuration. You may be unable to use the alert function due to network environment and settings.

5.7 ECO setting

-- The electric power value might not necessarily reach even the value of Power Threshold. The electric power control lowers the power consumption of the system by lowering the frequency of CPU/Memory. When CPU/Memory Throttling value reaches 100%, the electric power value does not fall any more.
-- The server may not boot correctly if you configure too low value to the Aggressive Mode Power Threshold(Pa) and enable the Shutdown System option.
-- The following case, ECO settings are not supported and not displayed.
"Operating System is Windows Server 2003(R2)." and "NEC ESMPRO Agent is installed."

5.8 Management LAN setting

-- When set to "Shared BMC LAN", the management LAN port is disabled.
-- When set to "Shared BMC LAN", the network performance may be reduced because the data of both LANs must be transmitted or received.

5.9 Default setting

-- There are differences between values that are applied to the BMC by executing "BMC Initialization" and values that are applied by selecting "Default Value" in BMC Configuration.

Item	Default Value in BMC Configuration	BMC Initialization
Network		
Management LAN	Management LAN	Management LAN
Connection Type	Auto Negotiation	Auto Negotiation
DHCP	Blade server: Enable Other server: Disable	Blade server: Enable Other server: Disable
IP Address	192.168.1.1	192.168.1.1
Subnet Mask	255.255.255.0	255.255.255.0
Default Gateway	0.0.0.0	0.0.0.0
Dynamic DNS	Disable	Disable
DNS Server	0.0.0.0	0.0.0.0
Host Name	Blank	"BMC" + Mac Address
Domain Name	Blank	Blank
Access Limitation Type	Allow All	Allow All
IP Address	Blank	Blank
Service		
HTTP	Enable	Enable
HTTP Port	80	80
HTTPS	Enable	Enable
HTTPS Port	443	443
SSH	Enable	Enable
SSH Port	22	22
User Account		
User	Enable	No.1: Enable Other: Disable
User Name	Blank	No.1: Administrator Other: Blank
Password	Blank	No.1: Administrator Other: Blank
Privilege	Administrator	No.1: Administrator Other: User

Item	Default Value in BMC Configuration	BMC Initialization
Active Directory		
Active Directory Authentication	Disable	Disable
User Domain Name	Blank	Blank
Timeout	120	120
Domain Controller Server 1	Enable	Disable
Domain Controller Server 2	Disable	Disable
Domain Controller Server 3	Disable	Disable
Group Name	Blank	Blank
Group Domain	Blank	Blank
Privilege	Administrator	User
LDAP		
LDAP Authentication	Disable	Disable
IP Address	0.0.0.0	Blank
Port	639	389
Search Base	Blank	Blank
Bind Domain Name	Blank	Blank
Bind Password	Blank	Blank
Mail Alert		
Alert	Disable	Disable
Response time of SMTP server	30	30
To:1	Enable	Disable
Mail Address	Blank	Blank
To:2	Disable	Disable
Mail Address	Blank	Blank
To:3	Disable	Disable
Mail Address	Blank	Blank
From	Blank	Blank
Reply-To	Blank	Blank
Subject	Blank	Blank
SMTP Server	0.0.0.0	0.0.0.0
SMTP Port	25	25
SMTP Authentication	Disable	Enable
User Name	Blank	Blank
Password	Blank	Blank
Alert Level	Error/ Warning	Separate Setting
SNMP Alert		
Alert	Disable	Disable
Computer Name	Blank	Blank
Community Name	public	public
Alert Process	One Alert Receiver	One Alert Receiver
Alert Acknowledge	Enable	Disable
Alert Retry Count	3	0
Alert Timeout	6	0
Primary IP Address	Enable	Disable
IP Address	0.0.0.0	0.0.0.0
Secondary IP Address	Disable	Disable
IP Address	0.0.0.0	0.0.0.0
Tertiary IP Address	Disable	Disable
IP Address	0.0.0.0	0.0.0.0
Alert Level	Error/ Warning	Separate Setting
System Operation		
Remote KVM Console Encryption	Enable	Disable

Item	Default Value in BMC Configuration	BMC Initialization
Port (No Encryption)	7578	7578
Port (Encryption)	7582	7582
Mouse Cursor Mode	Dual	Single
Mouse Coordinate Mode	Windows: Absolute Linux, Offline: Relative	Absolute
Keyboard Language	Japanese OS: Japanese(JP) Other: English(US)	English(US)
Remote Media Encryption	Enable	Disable
Port (No Encryption)	5120	5120
Port (Encryption)	5124	5124
ECO		
Aggressive Mode	Disable	(no change)
Power Threshold(Pa)	Maximum Configuration of During Operation	(no change)
Correction time limit	2	(no change)
Shutdown System	Disable	(no change)
Non-Aggressive Mode	Disable	(no change)
Power Threshold(Pn)	Power Threshold(Pa) - 10 or Minimum Configuration of Idle + 10	(no change)
Correction time limit	10	(no change)
Safe Power Capping	Disable	(no change)
Boot Time Configuration	Disable	(no change)
Performance Mode	Performance Optimized	(no change)
Disable CPU Cores	0	(no change)
Control		
One Time Boot Device	No Change	(no change)
Miscellaneous		
Behavior when SEL repository is full	Stop logging SEL	(no change)
AC-Link	Last State	(no change)
Delay Time	Minimum value	(no change)
Platform Event Filter	Enable	Disable
ESMPRO Management	(no change)	Disable
Authentication Key	guest	Blank
Redirection	Enable	Disable

Revision History

1.00	2011/05/10	Initial edition
1.01	2011/06/24	Adds ECO setting Precautions. Adds Management LAN setting Precautions. Adds required packages by Red Hat Enterprise Linux Server 6 (x64). Changes cover. Corrects writing errors.
1.02	2011/10/14	Changes Mail Alert and ECO setting. Changes ECO setting Precautions. Corrects writing errors.
1.10	2012/02/29	Adds User Account, User, Active Directory, Group, LDAP and System Operation setting. Changes Network, ECO and Miscellaneous setting. Adds Clear BMC SEL. Changes BMC Initialization. Adds Default setting Precautions. Corrects writing errors.

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